

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

PATENT NO. : 7,026,238 B2
APPLICATION NO. : 10/052681
DATED : April 11, 2006
INVENTOR(S) : Ming Xi et al.

Page 1 of 4

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

On the Cover Page:

Item [75], Inventors: Change Paul Frederick Smith's city of residence from "San Jose, CA" to --Campbell, CA--

Item [56], References Cited, U.S. PATENT DOCUMENTS: Please add the following references:

-- 6,607,977	8/2003	Rozbicki et al.438/627
6,498,091	12/2002	Chen et al.438/627
2003/0087520	5/2003	Chen et al. 438/643
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Page 2 of 4

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Item [56], References Cited, U.S. PATENT DOCUMENTS (cont'd):

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6,157,061	12/2000	Kawata	257/316
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Item [56], References Cited, FOREIGN PATENT DOCUMENTS: Please add the following references:

--JP 08-213,119 7/1996--

Item [56], References Cited, OTHER PUBLICATIONS: Please add the following references:

-- Ghandi, Sorab K., "VLSI Fabrication Principles, Silicon and Gallium Arsenide"
Second Edition, Wiley-Interscience Publication (1994), Pages 617-620 and
Page 652.

R. F. Bunshah, "Handbook of Deposition Technologies for Films and
Coatings", 2nd edition, Noyas Publications, NJ, USA, 1994, 261, 321-325.

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Page 3 of 4

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Item [56], References Cited, OTHER PUBLICATIONS (cont'd):

Gardner et al., "Encapsulated Copper Interconnection Device using Sidewall Barriers", Thin Solid Films 262 (1995) 104-119.

Jang et al., "Tantalum and Niobium as a Diffusion Barrier between Copper and Silicon", J. Materials Science: Materials in Electronics 7 (1996) 271-278.

Tadashi Iijima, Yoshiakai Shimooka, and Kyoichi Suguro, "An Amorphous Ti-Si-N Diffusion Barrier Layer for Cu Interconnections," Vol. 78, No. 12, 1995, pages 67-74.

Mikagi H. Ishikawa, T. Usami, M. Suzuki, K. Inoue, N. Oda, S. Chikaki, I. Sakai and T. Kikkawa. "Barrier Metal Free Copper Damascene Interconnection Technology Using Atmospheric Copper Reflow and Nitrogen Doping in SiOF Film." 1996 IEEE. Pp. 365-368.

Y. Shacham-Diamand. V. Dubin, and M. Angyal "Electroless Copper Deposition for ULSI" 1995 Elsevier Science S.A., pp. 93-103.

Electromigration and Diffusion in Pure Cu and Cu(Sn) Alloys. C. K. Hu, K. L. Lee, D. Gupta, and P. Blauner, Mat. Res. Soc. Symp. Vol 427 (96-105).

Electromigration Failure Distributions for Multi-Large Interconnects as a Function of Line Width Experiments and Simulation, D.D. Brown, J.E. Sanchez, Jr., V. Pham, P.R. Besser, M.A. Korhonen, and C.Y. Li, Mat. Res. Soc. Symp. Vol 427.

USSN Serial No.: 09/635,738, Chen, et al., "Barrier Layer Structure for Copper Metallization and Method of Forming the Structure," Filed: August 09, 2000.

Column 5, Lines 34 and 35: Change each instance of "MHZ" to --MHz--

Column 5, Line 35: Add a period after "MHz"

Column 7, Line 47: Change "dc" to --DC--

Column 8, Line 12: After "fill", insert --of--

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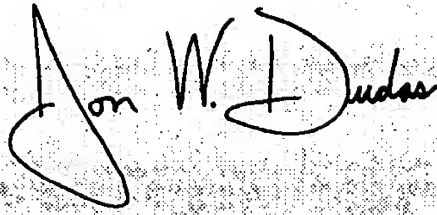
Page 4 of 4

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Column 8, Line 33: Change "Ta/aN" to --Ta/TaN--

Signed and Sealed this

Fifteenth Day of May, 2007

A handwritten signature in black ink, reading "Jon W. Dudas". The signature is written in a cursive style with a large, stylized "J" and "D".

JON W. DUDAS
Director of the United States Patent and Trademark Office